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DT05 Rec'd PCT/PTO 09 DEC 2004

VIA Express Mail EL629610319US  
PATENT  
36856.1310

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re. application of : Yoshihiro ITO and Michio KADOTA  Serial No.: Unknown  Filed: Concurrently herewith  For: SEMICONDUCTOR DEVICE AND METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICE	International Application No.: PCT/JP03/07055  International Filing Date: June 4, 2003
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**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with 37 CFR §1.56, and in recognition of their duty to disclose to the United States Patent and Trademark Office relevant information known to be material to patentability, Applicants herewith submit copies of the prior art listed on the attached Form PTO-1449. The prior art references No. 1-6 and 8-11 were cited in the International Search Report for PCT Application No. PCT/JP03/07055. The prior art references No. 7, 12, and 13 are additional references that Applicants are submitting herewith.

The relevance of the prior art reference No. 7 is discussed on page 3 of the substitute specification filed concurrently herewith.

The relevance of the prior art reference 12 is discussed on page 2 of the substitute specification filed concurrently herewith.

The relevance of the prior art reference 13 is discussed on pages 2 and 3 of the substitute specification filed concurrently herewith.

The statement is not a representation that all of the information cited is necessarily effective as prior art against the application.

Applicants respectfully request that the disclosed references be made of record in the subject application.

Respectfully submitted,

Date: December 9, 2004

  
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Substitute for form 1449/PTO

**Complete if known**

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet **1** of **2**

Application Number	
Filing Date	
First Named Inventor	<b>Yoshihiro ITO</b>
Art Unit	
Examiner Name	
Attorney Docket Number	<b>36856.1310</b>

### U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM -YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> Number-Kind Code <sup>5</sup> (if known)	Publication Date MM -YYYY	Country of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	<b>1</b>	<b>JP 2002-326895</b> (English abstract and machine translation)	<b>11/2002</b>	<b>JAPAN</b>		<b>X</b>
	<b>2</b>	<b>JP 2001-244464</b> (English abstract and machine translation)	<b>09/2001</b>	<b>JAPAN</b>		<b>X</b>
	<b>3</b>	<b>JP 2000-150900</b> (English abstract and machine translation)	<b>05/2000</b>	<b>JAPAN</b>		<b>X</b>
	<b>4</b>	<b>JP 2002-319682</b> (English abstract and machine translation)	<b>10/2002</b>	<b>JAPAN</b>		<b>X</b>
	<b>5</b>	<b>JP 10-306372</b> (English abstract and machine translation)	<b>11/1998</b>	<b>JAPAN</b>		<b>X</b>
	<b>6</b>	<b>EP 1 134 811</b>	<b>09/2001</b>	<b>EPO</b>		<b>X</b>
	<b>7</b>	<b>JP 05-171435</b> (English abstract and machine translation)	<b>07/1993</b>	<b>JAPAN</b>		<b>X</b>
	<b>8</b>	<b>JP 2001-144328</b> (English abstract and machine translation)	<b>05/2001</b>	<b>JAPAN</b>		<b>X</b>

\* Examiner: Initial if reference considered, whether of not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the Indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Abstract is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14.

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# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

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Sheet 2 of 2

Application Number	
Filing Date	
First Named Inventor	Yoshihiro ITO
Art Unit	
Examiner Name	
Attorney Docket Number	36856.1310

## **NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title Of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	9	Yutaka OHYA et al., "THIN FILM TRANSISTOR OF ZnO FABRICATED BY CHEMICAL SOLUTION DEPOSITION", Jpn. J. Appl. Phys., Vol. 40 (2001), pp. 297- 298, Part 1, No. 1, January 2001.	
	10	K. YAMAYA et al., "USE OF HELICON-WAVE EXCITED PLASMA FOR ALUMINUM- DOPED ZnO THIN-FILM SPUTTERING", Appl. Phys. Lett. 72 (2), January 12, 1998, pp. 235-237.	
	11	S.K. HONG et al., "ZnO AND RELATED MATERIALS: PLASMA-ASSISTED MOLECULAR BEAM EPITAXIAL GROWTH, CHARACTERIZATION, AND APPLICATION", Journal of Electronic Materials, Vo. 30, No. 6, 2001, pp. 647-658.	
	12	Shen ZHU et al., "POLARITY EFFECTS OF SUBSTRATE SURFACE IN HOMOEPITAXIAL ZnO FILM GROWTH", Journal of Crystal Growth 219 (2000), pp. 361-367.	
	13	Yefan CHEN et al., "MORPHOLOGY EVOLUTION OF ZnO (000 1) SURFACE DURING PLASMA-ASSISTED MOLECULAR-BEAM EPITAXY", Applied Physics Letters, Volume 80, Number 8, 02/2002, pp. 1358-1360.	
	14	Soon-Ku HONG et al., "CONTROL OF POLARITY OF ZnO FILMS GROWN BY PLASMA-ASSISTED MOLECULAR-BEAM EPITAXY: Zn- AND O-POLAR ZnO FILMS ON Ga-POLAR AND GaN TEMPLATES", Applied Physics Letters, Volume 77, Number 22, 11/2000, pp. 3571-3573.	

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\* Examiner: Initial if reference considered, whether of not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered, include copy of this form with next communication to applicant.

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